

US-PAT-NO: 6308317
DOCUMENT-IDENTIFIER: US 6308317 B1
TITLE: Using a high level programming language with a microcontroller

Detailed Description Paragraph Right - DEPR:

Referring to FIG. 1, an integrated circuit card 10 (e.g., a smart card) is constructed to provide a high level, Java-based, multiple application programming and execution environment. The integrated circuit card 10 has a communicator 12a that is configured to communicate with a terminal communicator 12b of a terminal 14. In some embodiments, the integrated circuit card 10 is a smart card with an 8 bit microcontroller, 512 bytes of RAM, 4K bytes of EEPROM, and 20K of ROM; the terminal communicator 12b is a conventional contact smart card reader; and the terminal 14 is a conventional personal computer running the Windows NT operating system supporting the personal computer smart card (PC/SC) standard and providing Java development support.

DOCUMENT-IDENTIFIER: US 6342844 B1
TITLE: Two-way radio-based electronic toll collection
method and system for
highway

----- KWIC -----

BSPR:

The operation of the RF noncontact IC card when a person who possesses the IC card passes, for example, through a special toll gate controlled by terminal, looks like electromagnetic wave serial exchange between the IC card and terminal over selected allowed channel of a communication link. However there are a very narrow windows in permitted radio-band on electromagnetic radiated fields, which are possible to use to power radio-frequency cards. Particularly at frequencies below 13.56 MHz, it is possible, by limiting the distance between the terminal (R/W) and the card (transponder) to derive the energy for the contactless smart card from the radio waves. Notwithstanding the frequency spectrum for a given radio systems is a limited communication resource (band width and consequently the data rate) and several users may be competing for this communication resource, that may guide to the collisions and interference, and of this kind systems can not provide reliable operation when more than one noncontact IC card is located in active area of a terminal.

DOCUMENT-IDENTIFIER: US 6253193 B1
TITLE: Systems and methods for the secure transaction
management and electronic
rights protection

----- KWIC -----

BSPV:

support smart card implementations of the present invention
in the form of
portable electronic appliances, including cards that can be
employed as secure
credit, banking, and/or money cards. A feature of the
present invention is the
use of portable VDEs as transaction cards at retail and
other establishments,
wherein such cards can "dock" with an establishment
terminal that has a VDE
secure sub-system and/or an online connection to a VDE
secure and/or otherwise
secure and compatible subsystem, such as a "trusted"
financial clearinghouse
(e.g., VISA, Mastercard). The VDE card and the terminal
(and/or online
connection) can securely exchange information related to a
transaction, with
credit and/or electronic currency being transferred to a
merchant and/or
clearinghouse and transaction information flowing back to
the card. Such a
card can be used for transaction activities of all sorts.
A docking station,
such as a PCMCIA connector on an electronic appliance, such
as a personal
computer, can receive a consumer's VDE card at home. Such
a station/card
combination can be used for on-line transactions in the
same manner as a VDE
installation that is permanently installed in such an
electronic appliance.
The card can be used as an "electronic wallet" and contain
electronic currency
as well as credit provided by a clearinghouse. The card
can act as a

convergence point for financial activities of a consumer regarding many, if not all, merchant, banking, and on-line financial transactions, including supporting home banking activities. A consumer can receive his paycheck and/or investment earnings and/or "authentic" VDE content container secured detailed information on such receipts, through on-line connections. A user can send digital currency to another party with a VDE arrangement, including giving away such currency. A VDE card can retain details of transactions in a highly secure and database organized fashion so that financially related information is both consolidated and very easily retrieved and/or analyzed. Because of the VDE security, including use of effective encryption, authentication, digital signaturing, and secure database structures, the records contained within a VDE card arrangement may be accepted as valid transaction records for government and/or corporate recordkeeping requirements. In some embodiments of the present invention a VDE card may employ docking station and/or electronic appliance storage means and/or share other VDE arrangement means local to said appliance and/or available across a network, to augment the information storage capacity of the VDE card, by for example, storing dated, and/or archived, backup information. Taxes relating to some or all of an individual's financial activities may be automatically computed based on "authentic" information securely stored and available to said VDE card. Said information may be stored in said card, in said docking station, in an associated electronic appliance, and/or other device operatively attached thereto, and/or remotely, such as at a remote server site. A card's data, e.g. transaction history, can be backed up to an individual's personal computer or other electronic

appliance and such an appliance may have an integrated VDE installation of its own. A current transaction, recent transactions (for redundancy), or all or other selected card data may be backed up to a remote backup repository, such a VDE compatible repository at a financial clearinghouse, during each or periodic docking for a financial transaction and/or information communication such as a user/merchant transaction. Backing up at least the current transaction during a connection with another party's VDE installation (for example a VDE installation that is also on a financial or general purpose electronic network), by posting transaction information to a remote clearinghouse and/or bank, can ensure that sufficient backup is conducted to enable complete reconstruction of VDE card internal information in the event of a card failure or loss.

DEPR:

In a retail establishment, the auxiliary terminal host 2608 might take the form of a portable device presented to the user, for example at the end of a meal. The user might place his portable appliance 2600 into a smart card receptacle such as a PCMCIA slot, and then enter whatever additional information that might appropriately describe the transaction as well as satisfying whatever electronic appliance 600 identification procedure(s) required. The transaction, given the availability of sufficient credit, would be approved, and transaction related information would then be communicated back from the auxiliary terminal directly into the portable appliance 2600. This would be a highly convenient mode of credit usage and record management.

DEPR:

The VDE preferred embodiment object creation and control structure design processes support fundamental configurability of control information. This enables VDE 100 to support a full range of possible content types, distribution pathways, usage control information, auditing requirements, and users and user groups. VDE object creation in the preferred embodiment employs VDE templates whose atomic elements represent at least in part modular control processes. Employing VDE creation software (in the preferred embodiment a GUI programming process) and VDE templates, users may create VDE objects 300 by, for example, partitioning the objects, placing "meta data" (e.g., author's name, creation date, etc.) into them, and assigning rights associated with them and/or object content to, for example, a publisher and/or content creator. When an object creator runs through this process, she normally will go through a content specification procedure which will request required data. The content specification process, when satisfied, may proceed by, for example, inserting data into a template and encapsulating the content. In addition, in the preferred embodiment, an object may also automatically register its presence with the local VDE node electronic appliance 600 secure subsystem, and at least one permissions record 808 may be produced as a result of the interaction of template instructions and atomic methods, as well as one or more pieces of control structure which can include one or more methods, budgets, and/or etc. A registration process may require a budget to be created for the object. If an object creation process specifies an initial distribution, an administrative object may also be created for distribution. The administrative object may contain one or more permission records 808, other control

structures, methods,
and/or load modules.

DEPR:

The embedding processes for all VDE embedded content containers normally involves securely identifying the appropriate content control information for the embedded content. For example, VDE content control information for a VDE installation and/or a VDE content container may securely, and transparently to an embedder (user), apply the same content control information to edited (such as modified or additional) container content as is applied to one or more portions (including all, for example) of previously "in place" content of said container and/or securely apply control information generated through a VDE control information negotiation between control sets, and/or it may apply control information previously applied to said content. Application of control information may occur regardless of whether the edited content is in a parent or embedded container. This same capability of securely applying content control information (which may be automatically and/or transparently applied), may also be employed with content that is embedded into a VDE container through extracting and embedding content, or through the moving, or copying and embedding, of VDE container objects. Application of content control information normally occurs securely within one or more VDE secure sub-system PPEs 650. This process may employ a VDE template that enables a user, through easy to use GUI user interface tools, to specify VDE content control information for certain or all embedded content, and which may include menu driven, user selectable and/or definable options, such as picking amongst alternative control methods (e.g. between different forms

of metering) which
may be represented by different icons picturing
(symbolizing) different control
functions and apply such functions to an increment of VDE
secured content, such
as an embedded object listed on an object directory
display.